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| **NOAA AWARD NUMBER:** | NA17FX1408 |
| **GRANT PROGRAM/CFDA#:** | Marine Mammal Data Program<br>11.439 |
| **NAME OF RECIPIENT ORGANIZATION:** | School of Fisheries and Ocean Sciences, University of Alaska Fairbanks |
| **PRINCIPAL INVESTIGATORS:** | Kate M. Wynne (PI) and<br>Amy C. Hirons (co-PI) |
| **PROJECT TITLE:** | Seasonal Forage Patterns of Steller Sea Lions |
| **FUNDING:** | $111,464 |
| **AWARD PERIOD:** | July 1, 2001 – June 30, 2003 |
| **REPORT PERIOD:** | July 1, 2001 – January 30, 2002 |

## PROJECT SUMMARY

The seasonality of Steller sea lion predator-prey relationships is being explored through the use of stable isotope ratios ($\delta^{13}C$ and $\delta^{15}N$). Tissues from sea lions, known prey and potential predator species are being collected from the Kodiak area to help assess the sea lions' seasonal and multi-year foraging variability in the western Gulf of Alaska archipelago. Vibrissae (whiskers) are natural recorders of isotope ratios acquired for the sea lions' diet and can provide spatial and temporal feeding information on wild sea lions while at sea. Until now, autumn and winter sampling have been lacking. So in order to quantify year-round foraging, samples are being obtained and analyzed to complete seasonal records of intra- and inter-annual diet and feeding locations. In recent years, population increases in salmon and sleeper sharks from the Gulf of Alaska have become noticeable to researchers and has led to speculation regarding their foraging habits and the possible predation on pinnipeds. Seasonal isotopic data from sharks in the Kodiak region are being added to the trophic database to determine the potential of shark predation on juvenile and/or adult sea lions.

## PROGRESS AND RESULTS

Vibrissae from Steller sea lions have been collected by personnel (L. Rea) from the Alaska Department of Fish and Game and the stable isotope data will be shared with investigators for this project once the tissues have been analyzed. In the mean time, previously acquired sea lion isotope data are being used in the construction of the regional food web.

Autumn and winter sampling for forage fish and cephalopods have and continue to take place. Subsamples of these prey tissues are being collected by University technicians in Kodiak and their shipment to Fairbanks is expected by the end of January. Stable isotope analyses will take place at that time. Additional prey species will be collected as planned during the March sampling cruise.

Late winter tissue samples from both species of sharks have been analyzed and their data have been added to the trophic food web being constructed for the western Gulf of Alaska. Preliminary data do not indicate that these few sharks sampled have been foraging on adult sea lions. The data are currently inconclusive for juvenile sea lions. Additional information on North Pacific trophic linkages, and particularly these two species of sharks, are being gathered from NOAA researchers (P. Livingston).

Delays in acquiring the prey tissue samples resulted from a lack of technician assistance in Kodiak until late in 2001. A recently-hired technician is currently compiling subsamples of the prey tissues from fall of 2001 and preparing them for shipment to A. Hirons at UAF for isotopic analysis. Sharks were unable to be collected during the late autumn fishing cruises in 2001 due to the rough weather conditions in the waters in the western Gulf of Alaska. Additional shark tissues are expected once the fishing season resumes January 20, 2002.

No additional difficulties were experienced during this time period.

**Prepared by Co-Investigators :** **Kate M. Wynne**
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